

**REMARKS**

**I. Status of the Claims**

Claims 36-39 and 41-74 are pending in this application, of which claims 36-55 are under examination. Claims 56-74 are withdrawn by the Office as directed to non-elected subject matter. Applicants previously cancelled claims 1-35. Claim 40 is cancelled, and claims 36-39, 41-58, 63, 64, and 67-72 are amended herein.

Claim 36 is amended to recite that the polymer compound is “chemically bound to at least one hydrocarbon segment chosen from hydrophilic hydrocarbon segments of polyhydroxylated compounds and hydrophobic hydrocarbon segments.” Support for that amendment may be found in the specification as-filed, for example, at page 2, II. 29-32. Claim 36 is further amended to recite that the “polymer does not comprise a bifunctional spacer group together with hydrophobic hydrocarbon segments.” Support for that amendment may be found in the original claim and the specification as-filed, for example, at page 7, II. 18-23. The dependency of claim 41 is amended in view of the cancellation of claim 40. Claims 37-39, 41-58, 63, 64, and 67-72 are amended for clarification. As such, there is no written description issue.

**II. Objection to the Specification**

The Office objects to the specification because, according to the Office, “the section headings are not present as required by 37 C.F.R. 1.77(b). . . . Applicant may wish to consider whether it is appropriate to amend the instant specification to include the section headings in the order described in M.P.E.P. § 608.01(a).” Office Action at page 3.

Section headings are not required under M.P.E.P § 608.01, but rather suggested. Indeed, 37 C.F.R. § 1.77(b) provides that “the specification should include the following sections in order . . . .” 37 C.F.R. § 1.77(b) (emphasis added). Moreover, the M.P.E.P. provides that “[t]he following order of arrangement of specification elements is preferable in framing the nonprovisional specification and each of the lettered items should appear in upper case, without underlining or bold type, as section headings. . . . The following guidelines . . . are suggested for the applicant’s use.” M.P.E.P. § 608.01(a) (emphasis added).

Requirements, on the other hand, employ obligatory words such as “shall” or “must.” See, e.g., *id.* § 608.01(I)(b)(3) (“[t]he claim or claims must commence on a separate physical sheet or electronic page”) (*citing* 37 C.F.R. § 1.75(h) (emphasis added)), *id.* § 608.01(VI) (“[t]he specification . . . shall not contain drawings or flow diagrams”) (*quoting* 37 C.F.R. § 1.58) (emphasis added). The Office’s own remarks recognize the option, not the requirement, to include section headings, stating that “Applicant may wish to consider . . . .” Office Action at page 3 (emphasis added).

Neither the regulations nor the patent guidelines require the use of section headings. As such, Applicants submit that the objection is improper and respectfully request that it be withdrawn.

### III. Rejection Under 35 U.S.C. § 102

The Office rejects claims 36, 37, 39, 45, and 55 under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent Application Publication No. 2003/0143175 to Samain et al. (“Samain”). Office Action at page 3. Applicants respectfully disagree and traverse the rejection for at least the following reasons.

Anticipation under § 102(b) requires that a prior art reference teach each and every element of the claim. See M.P.E.P. § 2131. The Office points to "a two polymer reagent composition (Composition C)" comprising PAMAM dendrimers and Gantrez S-97BF. Office Action at page 4. Gantrez is a maleic acid copolymer. See, e.g., Samain at paragraph [0079]. The present claims as-amended are directed to

[a]n aqueous composition comprising . . . at least one polymer compound whose chain comprises at least two  
amine units chosen from -NH- and  $-\overset{\text{I}}{\text{N}}-$  and is devoid of any  
vinyl amine or vinyl amide unit, said polymer compound  
being chemically bound to at least one hydrocarbon segment  
chosen from hydrophilic hydrocarbon segments of  
polyhydroxylated compounds and hydrophobic hydrocarbon  
segments . . .

Applicants' claim 36, as-amended. Samain does not teach a polymer compound chemically bound to, e.g., polyhydroxylated compounds.

In addition, Samain only discloses a composition comprising two polymers (e.g., polymers A and B) that do not react together to form covalent bonds before applying the cosmetic composition to a keratin material. See Samain at paragraphs [0007]-[0009]. Therefore, these two polymers are not chemically bound in the cosmetic composition, and are only capable of reacting together after applying the cosmetic composition to a keratin material. The fact that these polymers do not react together before application to a keratin material is an essential feature of Samain.

Indeed, Samain insists on the fact that:

[t]he product as disclosed herein may thus be in the form of a composition comprising a combination of at least two polymers PA and PB, comprising complementary chemical functional groups, in a cosmetically acceptable medium, wherein the cosmetically acceptable medium is chosen such that the at least two polymers remain inert with respect to

each other in the composition, but react, forming covalent bonds, after applying the composition to hair.

*Id.* at paragraph [0049] (emphasis added). Thus, it is clearly excluded by Samain that the polymers PA and PB react together to form a modified polymer before application to the keratin fiber.

For at least the foregoing reasons, Applicants submit that Samain fails to anticipate the present claims. Accordingly, Applicants respectfully request that the rejection be withdrawn.

#### **IV. Rejections Under 35 U.S.C. § 103**

##### **A. Claims 36-41, 45-50, 54, and 55**

Claims 36-41, 45-50, 54, and 55 are rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Samain. Office Action at page 5. Applicants respectfully disagree and traverse the rejection for at least the following reasons.

The Office asserts that Samain provides disclosure that would guide a person of ordinary skill in the art toward Applicants' claimed invention. See *id.* at 5-9. For example, the Office contends that Samain teaches polymers "contain[ing] at least two sets of identical chemical functional groups (A,A, B,B) and polylysine and PAMAM dendrimer are taught to be combined with maleic anhydride in Gantrez." *Id.* at 7. The Office further asserts that it would have been obvious to

substitut[e] Samain's polymer of Composition C with polyethyleneimine-polyvinyl alcohol polymers because Samain teaches use of two chemically identical functional groups (A,A, or B,B) to bond to at least two other polymers and polyethyleneimines, dendrimers, and polyvinyl alcohols are taught to be polymers which all bind with maleic anhydride. . . . The skilled artisan would have been motivated to do so in order to modify the molecular weight of the formed composition, its feel, and deposition.

*Id.* at 7-8. According to the Office, a person of ordinary skill in the art would have been motivated to modify Samain's invention "to provide better conditioning and combability to the hair in which the composition is applied," and "to modify the molecular weight of the formed composition, its feel, and deposition." *Id.* Here, the Office fails to consider Applicants' claimed invention and the prior art as a whole. See M.P.E.P. § 2141.02. Samain does not establish a *prima facie* case of obviousness over Applicants' claims at least because Samain points in a different direction, and the Office's proffered motivation contradicts Samain's teachings.

Samain's objectives include producing "cosmetic products that are remanent with response to repeated washing." Samain at paragraph [0003]. Samain teaches a composition "capable of forming a coat on a keratin material, such as, hair," wherein the composition comprises polymers that "do not react together to form covalent bonds before applying," but "are capable of reacting to form covalent bonds together after applying" to hair. *Id.* at paragraphs [0001], [0007]-[0009] (emphasis added). That is, Samain only discloses a composition comprising two polymers (e.g., polymers A and B) that do not react together to form covalent bonds before applying the cosmetic composition to a keratin material. Therefore, these two polymers are not chemically bound in the cosmetic composition, and are only capable of reacting together after applying the cosmetic composition to a keratin material. Exemplary polymers, including commercially-available polymers, suitable for Samain's invention are listed in paragraphs [0078]-[0098]. See also *id.* at paragraphs [0121]-[0130] (Compositions "A" to "D").

Indeed, as discussed above, Samain insists that:

[t]he product as disclosed herein may thus be in the form of a composition comprising a combination of at least two polymers PA and PB, comprising complementary chemical functional groups, in a cosmetically acceptable medium, wherein the cosmetically acceptable medium is chosen such that the at least two polymers remain inert with respect to each other in the composition, but react, forming covalent bonds, after applying the composition to hair.

*Id.* at paragraph [0049] (emphasis added). Thus, it is clearly excluded by Samain that the polymers PA and PB react together to form a modified polymer before application to the keratin fiber. Accordingly, Samain would not prompt a person skilled in the art to formulate a composition comprising a polymer compound chemically bound to at least one hydrophilic and/or hydrophobic hydrocarbon segment.

Further, a person of ordinary skill in the art would understand Samain's invention as applying conventional polymers to keratin material, e.g., hair. Samain's examples illustrate compositions leaving "a thick and covering coat" and deposits on the hair that were "remanent to 10 shampoo washes." *Id.* at paragraphs [0131]-[0141]. According to Applicants' specification, conventional polyamines (i.e., one of the two polymers applied to hair in Samain) "suffer in particular from stickiness upon application . . . and their deposition onto the fiber is often uneven. This creates [a] heavy feel[] upon application and during the shampoo process." Applicants' specification at page 1, II. 8-16 (emphasis added).

The objectives in the present case consequently include providing a composition "without any sticky feel" that "distribut[es] more evenly" onto the hair. *Id.* at page 2, II. 11-18 (emphasis added). A person of ordinary skill in the art would have no reason to turn to Samain when that reference merely reiterates the type of polymer application known to result in stickiness. Modifying the polymer before applying it to the hair as

disclosed in the present case allows one to avoid the “sticky feel” and deposition problems associated with conventional application, e.g., Samain. See Applicants’ specification at page 3, ll. 4-7; and page 27, line 12 to page 28, line 9.

Moreover, modifying Samain contradicts its teachings regarding “the at least two polymers remain[ing] inert with respect to each other in the composition.” Samain at paragraph [0049]. Applicants respectfully remind the Office that “[t]he mere fact that references can be [] modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art.” M.P.E.P. § 2143.01 (emphasis original). The Office fails to address, much less establish, an element of predictability. Even if, for the sake of argument, the skilled artisan were to modify Samain’s invention, Samain teaches numerous types of polymers (see, e.g., Samain at paragraphs [0025]-[0047] and [0078]-[0098]), and there is no reason to pick and choose as the Office suggests.

For at least the foregoing reasons, Applicants submit that this rejection is erroneous and respectfully request that it be withdrawn.

*B. Claims 52 and 53*

The Office rejects claims 52 and 53 under 35 U.S.C. § 103(a) as allegedly unpatentable over Samain in view of U.S. Patent No. 4,818,523 to Clarke et al. (“Clarke”). Office Action at page 9. According to the Office,

the adjustment of particular conventional working conditions (e.g. determining result effective amounts of the cyclomethicone conditioning agent) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the ordinary artisan. Said artisan, at the time the invention was made, recognized from Clarke’s teachings that cyclomethicone is a conditioning agent which may be utilized in hair conditioning

compositions in an amount from 0.5-1 % (column 3, lines 30-40).

*Id.* at 9-10. Applicants respectfully disagree and traverse the rejection for the foregoing reasons with respect to Samain, and the additional reasons below. The Office disregards the fact that Samain and Clarke provide contradictory teachings.

As noted above, Samain seeks to produce “cosmetic products that are remanent with response to repeated washing.” Samain at paragraph [0003]. Clarke, on the other hand, teaches “[a] stable easily removable hair rinse conditioner which provides good conditioning, styling ease, and manageability of hair, but does not build up with shampoo/anionic surfactants . . . consisting essentially of effective amounts of . . . a cyclic or linear silicone, in an aqueous vehicle.” Clarke at Abstract (emphasis added). Clarke plainly states, in the lines immediately before those cited by the Office, that “[i]n a preferred aspect, the present invention relates to an easily removable hair rinse conditioner composition . . . consisting of . . . 0.5-1.0 of a cyclomethicone or a dimethicone copolyol, as the essential ingredients . . . .” *Id.* at col. 3, ll. 28-35 (emphasis added).

Applicants respectfully submit that “judicious selection and routine optimization” would not cause a person of ordinary skill in the art to combine Samain and Clarke, much less to even contemplate the present claims. Office Action at page 10. For at least the foregoing reasons, Applicants submit that the rejection is in error and should be withdrawn.

C. *Claim 51*

The Office rejects claim 51 under 35 U.S.C. § 103(a) as allegedly unpatentable over Samain in view of U.S. Patent No. 5,674,478 to Dodd et al. (“Dodd”). Office Action at page 10. According to the Office,

it would have been *prima facie* obvious . . . to have modified Samain's invention by adding amphoteric polymers . . . because Samain teaches inclusion of hair fixing polymers and amphoteric polymers are hair fixing polymers taught for use in hair conditioning compositions by Dodd (column 10, lines 10-35). The skilled artisan would have been motivated to do so in order to make the hair which has the treating polymers bound to it, more manageable.

*Id.* at 10-11. Applicants respectfully disagree and traverse the rejection for the foregoing reasons with respect to Samain, and the following additional reasons. The Office again disregards the fact that Samain and Dodd offer contradictory teachings.

As noted above, Samain teaches compositions that leave “a thick and covering coat.” Samain at paragraphs [0131]-[0134]. Dodd teaches “leave-on hair care compositions” that “have an unexpected low viscosity compared to traditional products containing said conditioning agents.” Dodd at col. 1, ll. 4-9 (emphasis added). As such, it remains unclear why a person of ordinary skill in the art would apply Dodd's teachings regarding a low viscosity composition to modify Samain's thick and covering composition.

For at least the foregoing reasons, Applicants respectfully submit that this rejection is in error and respectfully request that it be withdrawn.

D. *Claim 42*

The Office rejects claim 42 under 35 U.S.C. § 103(a) as allegedly unpatentable over Samain in view of U.S. Patent No. 4,983,383 to Maksimoski et al. (“Maksimoski”)

and U.S. Application Publication No. 2004/0115152 to Hannich et al. (“Hannich”). Office Action at page 11. Applicants respectfully disagree and traverse the rejection for the foregoing reasons with respect to Samain, and the following additional reasons.

The Office relies on Maksimoski for teaching “that polyvinyl alcohol is a hair setting polymer [] (column 15, lines 45-55),” and Hannich for teaching “waxy polyethylene glycols provide hair setting and water solubility (page 1, paragraphs 2, and 7-14).” *Id.* Yet, neither Maksimoski nor Hannich says anything about those polymers reacting; each reference teaches *polymers*, not *segments*. See, e.g., Applicants’ claim 42.

Maksimoski, for example, teaches hair setting polymers that are “soluble or dispersible in the volatile carrier or solvent phase.” Maksimoski at col. 15, ll. 39-42. Further, “[w]hen the hair-hold or hair-setting polymer is solubilized in the volatile carrier or solvent it is providing a traditional style holding benefit.” *Id.* at col. 15, line 68 to col. 16, line 4. A person of ordinary skill in the art reading Maksimoski would find no reason to take a solubilized component for use as a *segment* chemically bound to another polymer as recited in the present claims.

Similarly, Hannich teaches “a hair wax product for treating or setting up a human hairstyle, which contains a hydrophobic substance, which prevents crystallization of polyethylene glycol wax, besides hydrophilic polyethylene glycol wax itself.” Hannich at paragraph [0006]. Hannich’s product is manufactured “by melting and mixing the solid wax ingredients with each other.” *Id.* at paragraph [0054]. Hannich does not teach or even suggest polypropylene glycol *segments*. As such, the skilled artisan would have

no reason to combine Hannich and Samain as the Office suggests, much less as directed to the present claims.

For the foregoing reasons with respect to Samain, and the additional reasons above regarding Maksimoski and Hannich, Applicants submit that this rejection is erroneous and respectfully request that it be withdrawn.

*E. Claims 43 and 44*

The Office rejects claims 43 and 44 under 35 U.S.C. § 103(a) as allegedly unpatentable over Samain and U.S. Patent No. 4,269,680 to Rowe (“Rowe”). Office Action at page 12. Applicants respectfully disagree and traverse the rejection for the foregoing reasons with respect to Samain, and the following additional reasons.

The Office relies on Rowe for teaching “curable polymeric compositions comprising natural or synthetic rubber (title) . . . [and] that curable reagents which contain carboxyl groups include cinnamic acid and fatty acids having 6 or more carbon acids like linoleic acid (column 7, lines 45-50).” *Id.* The Office acknowledges, therefore, that Rowe is directed to “curable,” i.e., “photopolymerizable” compositions. Rowe at title, Abstract. For example, Rowe’s polymer “components can be cross-linked or cured during exposure to actinic light.” *Id.* at col. 1, ll. 9-10.

Samain teaches a cosmetic composition that “excludes polymers comprising photoactivatable chemical functional groups.” Samain at paragraph [0048]. Applicants respectfully remind the Office that if the “proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” M.P.E.P. § 2143.01. Combining Rowe’s photopolymerizable compositions with Samain when Samain

explicitly excludes photoactivity is improper for a determination of obviousness. For the reasons above with respect to Samain, and the additional reasons with respect to Rowe, Applicants respectfully submit this rejection is erroneous and request that it be withdrawn.

**V. Conclusion**

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of all of pending claims 36-39 and 41-74.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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